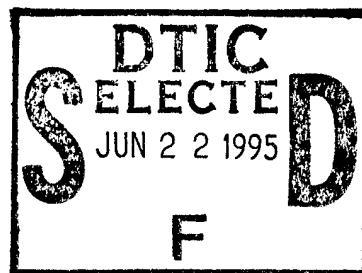


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ANNUAL GROUNDWATER QUALITY MONITORING REPORT
OTHER CONTAMINATION SOURCES
INTERIM RESPONSE ACTION
SOUTH TANK FARM PLUME



Prepared by
MK-Environmental Services
Denver, Colorado

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Prepared for
Shell Oil Company/Holme Roberts & Owen
Denver, Colorado

July 1992 DTIC QUALITY INSPECTED 8

Rocky Mountain Arsenal
Information Center
Commerce City, Colorado

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13. ABSTRACT (Maximum 200 words) THE OBJECTIVE OF THE GROUNDWATER QUALITY MONITORING PROGRAM IS TO VERIFY THE LOCATION OF THE LEADING EDGE OF THE BENZENE PLUME. THIS REPORT PROVIDES THE RESULTS OF THE MOST RECENT MONITORING EVENT, COMPLETED APRIL 7, 1992.		
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20. LIMITATION OF ABSTRACT		

INTRODUCTION

As described in the Final Implementation Document for the South Tank Farm Plume (STFP) Interim Response Action (IRA) (Shell 1991), groundwater quality will be monitored annually. The objective of the groundwater quality monitoring program is to verify the location of the leading edge of the benzene plume. This report provides the results of the most recent monitoring event, completed April 7, 1992.

GROUNDWATER SAMPLING AND ANALYSIS

The STFP is located in the southern half of Sections 1 and 2 on the RMA (Figure 1). Groundwater samples were collected from 24 monitoring wells specified in the Final Implementation Document for the STFP IRA (Figure 2). Samples were collected according to EPA guidelines and sampling procedures. The sampling order was governed by well location and historical contaminant detection levels. Wells were sampled sequentially, beginning with wells with non-detectable levels, and ending with wells having the highest concentrations located within the plume. Standard sampling equipment decontamination procedures were followed to minimize the possibility of cross contamination between samples.

Static water levels were measured prior to the start of the sampling program. Based on observed water levels, well casing volumes were calculated. If wells did not dewater, three casing volumes of water were purged from each well prior to sampling. To minimize the loss of volatile compounds, a stainless steel submersible pump was used to purge the wells and collect groundwater samples. Due to access problems, wells located in the spillway were purged and sampled with a bottom filling teflon bailer. As wells were purged, the groundwater pH, temperature, electrical conductivity (Table 1), and dissolved oxygen levels (Figure 3) were measured using an enclosed flow-through cell. All

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parameters were consistent with historical levels except for dissolved oxygen which was lower. This decrease is most likely a result of using a flow-through cell to collect measurements. Previous measurements were collected from a sample bucket that was exposed to ambient air, resulting in a higher dissolved oxygen reading. These parameters were not measured on the bailed wells due to the inability to use the flow-through cell.

Water samples were collected in three 40 ml. VOA vials. Samples were preserved with HCl. An additional vial was collected at each well and measured for pH, which was recorded on the chain of custody. Samples were stored and shipped in coolers packed with bubble pack and blue ice to maintain appropriate sample temperature. Analyte concentrations were measured by an off post contract laboratory using USATHAMA Method UU-8 for volatile compounds.

The number of field QA/QC samples was approximately 10% of the total number of routine groundwater samples collected. These samples included 1 duplicate sample, 1 matrix spike, 1 field blank, and 1 rinse blanks. In addition, a trip blank accompanied each set of samples sent to the laboratory. Field and laboratory QC data were reviewed by MK-Environmental Services to verify the quality of the data.

RESULTS AND INTERPRETATION

The results of groundwater analyses are presented in the Appendix. These include data from a sampling event completed in September 1991, in addition to the Annual Groundwater Monitoring Program completed in April 1992.

The field QC sample analyses indicate the laboratory provided reproducible data, with some minor laboratory cross contamination problems. However, due to the sampling sequence, cross

contamination did not affect the final results.

Analytical results of the trip blanks were below the Certified Reporting Limit (CRL) except for one sample which had a concentration of 4.2 ug/l of benzene. This sample was submitted with the samples containing the highest concentrations of benzene (50000-90000 ug/l), therefore, the amount of contamination in the trip blank is not considered to be significant.

The rinse blank was collected after sampling well 02503. Concentrations of 15.0 ug/l of benzene and 3.4 ug/l CHCL3 were reported. Correct sampling sequence and the concentration of CHCL3 being greater in the rinse blank than in the actual sample cause these concentrations to be insignificant. The field blank contained 19.0 ug/l of benzene which could possibly explain the presence of benzene in the rinse blank. The duplicate sample indicated that the laboratory provided reproducible data.

Due to its larger areal distribution, as compared to the other STFP compounds, benzene defines the leading edge of the STFP extending southwest from the South Tank Farm in the direction of Lake Ladora. The leading edge of the benzene plume toward Lake Ladora has historically been located slightly downgradient of Well 02504 (Figure 4). The benzene concentration in Well 02504 has been below the CRL in the two most recent sampling events of September, 1991 (Figure 5) and April, 1992 (Figure 6). The leading edge of the benzene plume is presently located slightly downgradient of Well 02503, between Wells 02503 and 02504. The pattern of steadily decreasing benzene concentrations at the leading edge of the STFP is illustrated in Figure 7. This appears to indicate that biodegradation is controlling the advancement of the STFP along the leading edge of the plume.

REFERENCES

Shell Oil Company, August 1991, Final Implementation Document,
Other Contamination Sources Interim Response Action, South
Tank Farm Plume.

Shell Oil Company, December 1990, Results of the Verification
Monitoring Program, South Tank Farm Plume, RMA.

Table 1

Field Water Quality Measurements - Spring 1992

<u>Well Number</u>	<u>Temp.</u>	<u>DO</u>	<u>Ec</u>	<u>pH</u>
01580	12.8	6.8	860	7.67
01581	14.3	3.2	720	7.34
01049	14.6	2.0	590	7.30
01586	13.8	1.7	670	7.39
01578	14.1	2.8	1100	7.34
01579	13.4	4.7	700	6.94
02585	13.7	1.6	730	7.51
02509	12.3	5.2	500	7.22
02526	9.3	4.3	590	7.28
02525	9.4	4.6	2200	6.75
02524	10.7	1.6	890	7.37
02518	11.5	3.9	1060	7.24
02597	11.9	5.9	2210	6.97
02507	12.7	1.5	3090	6.99
02506	14.7	2.3	2810	7.02
02513	13.4	4.0	3100	6.96
02514	13.9	2.0	1720	6.69
02515	12.9	7.0	1300	7.18
02505	14.4	2.4	2960	7.00
02508	10.5	4.4	3700	7.38
02511	14.0	0.8	3680	7.26
02596	14.2	3.2	3650	7.09
02598	13.5	0.8	2500	7.00
02577	13.6	0.8	2150	7.01
02504	13.9	0.6	3450	7.01
02503	13.8	2.4	3250	6.94
02502	13.7	0.6	1500	7.08
02501	13.6	0.5	1470	7.14
02576	13.7	1.4	1350	7.06
01588	13.7	2.8	990	7.23

Legend

- ++++ Railroad
- Stream/Drainage
- Plume
- Lakes



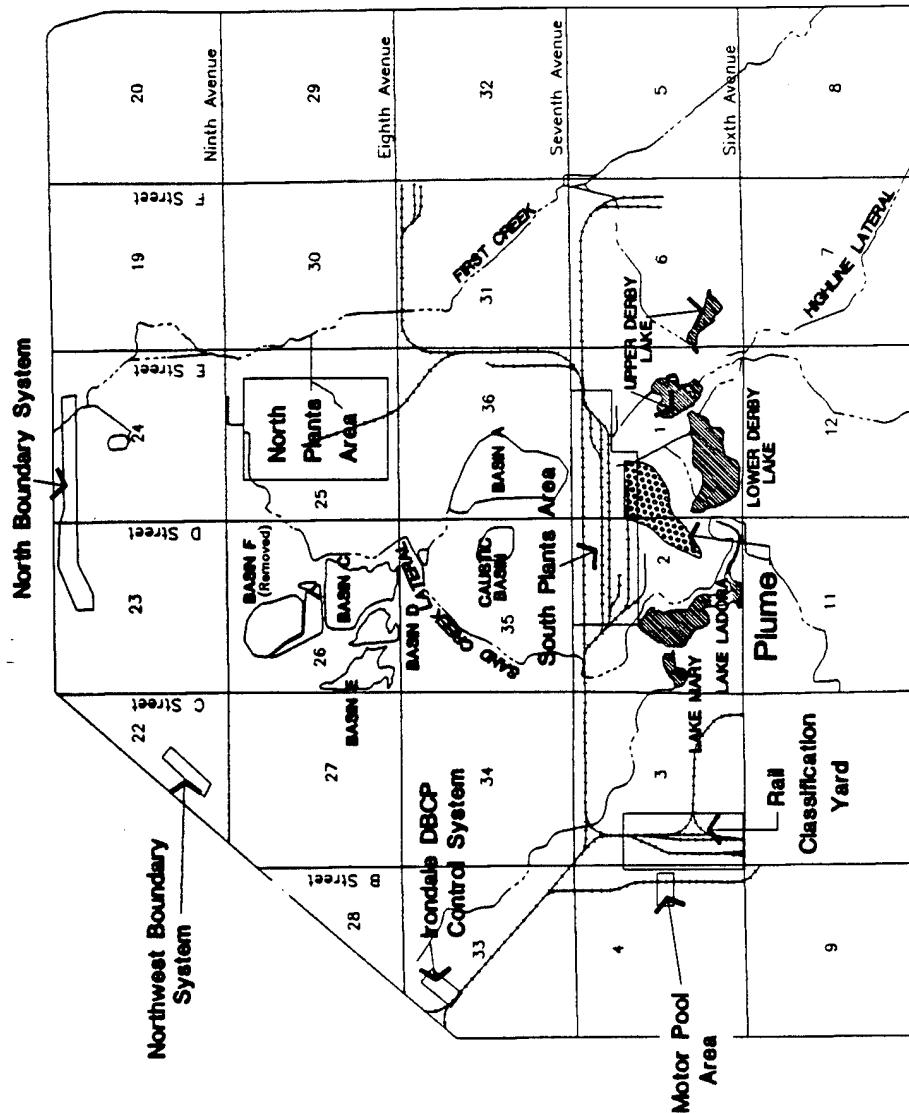
ROCKY MOUNTAIN ARSENAL
South Tank Farm Area

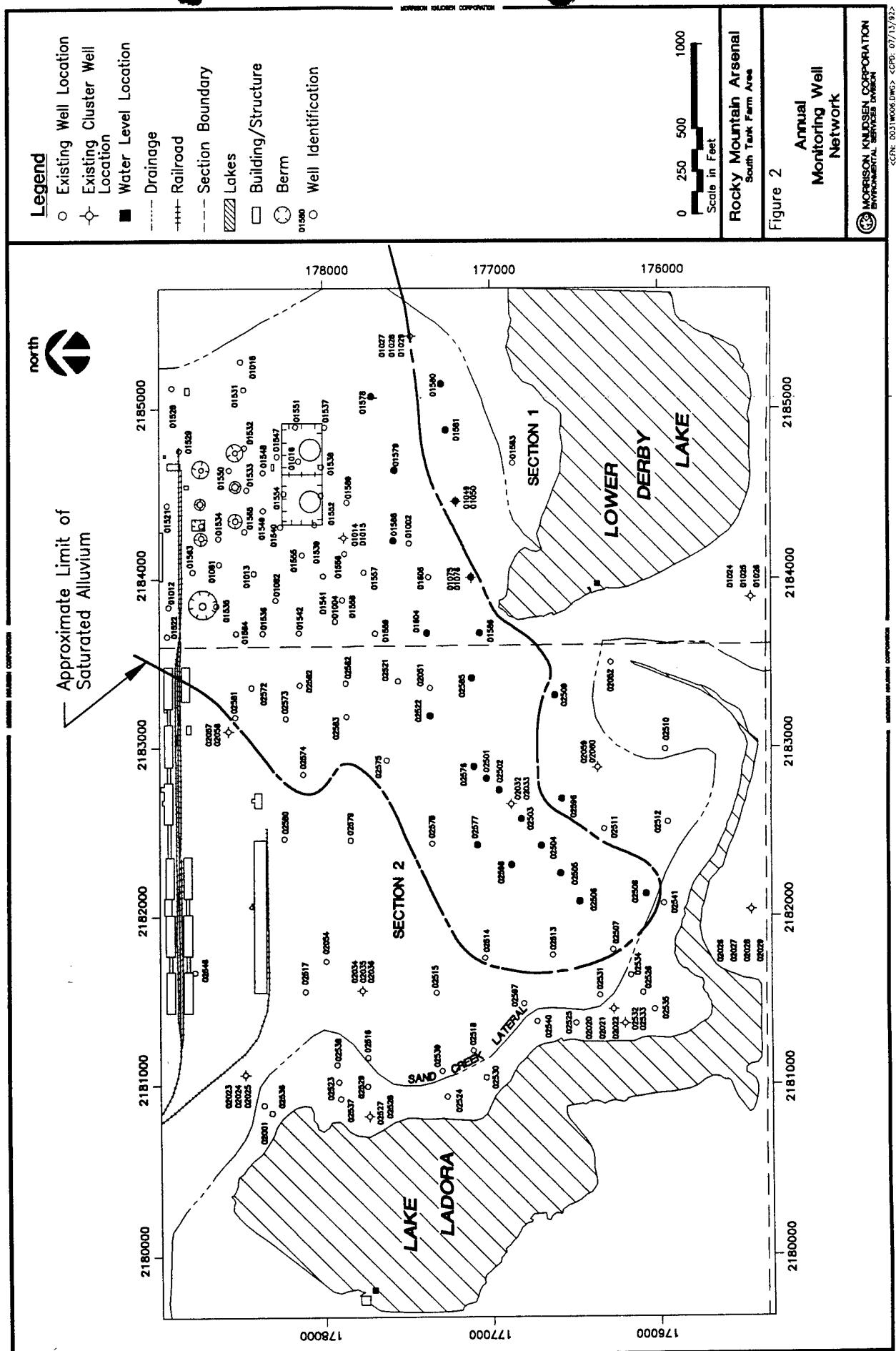
Figure 1

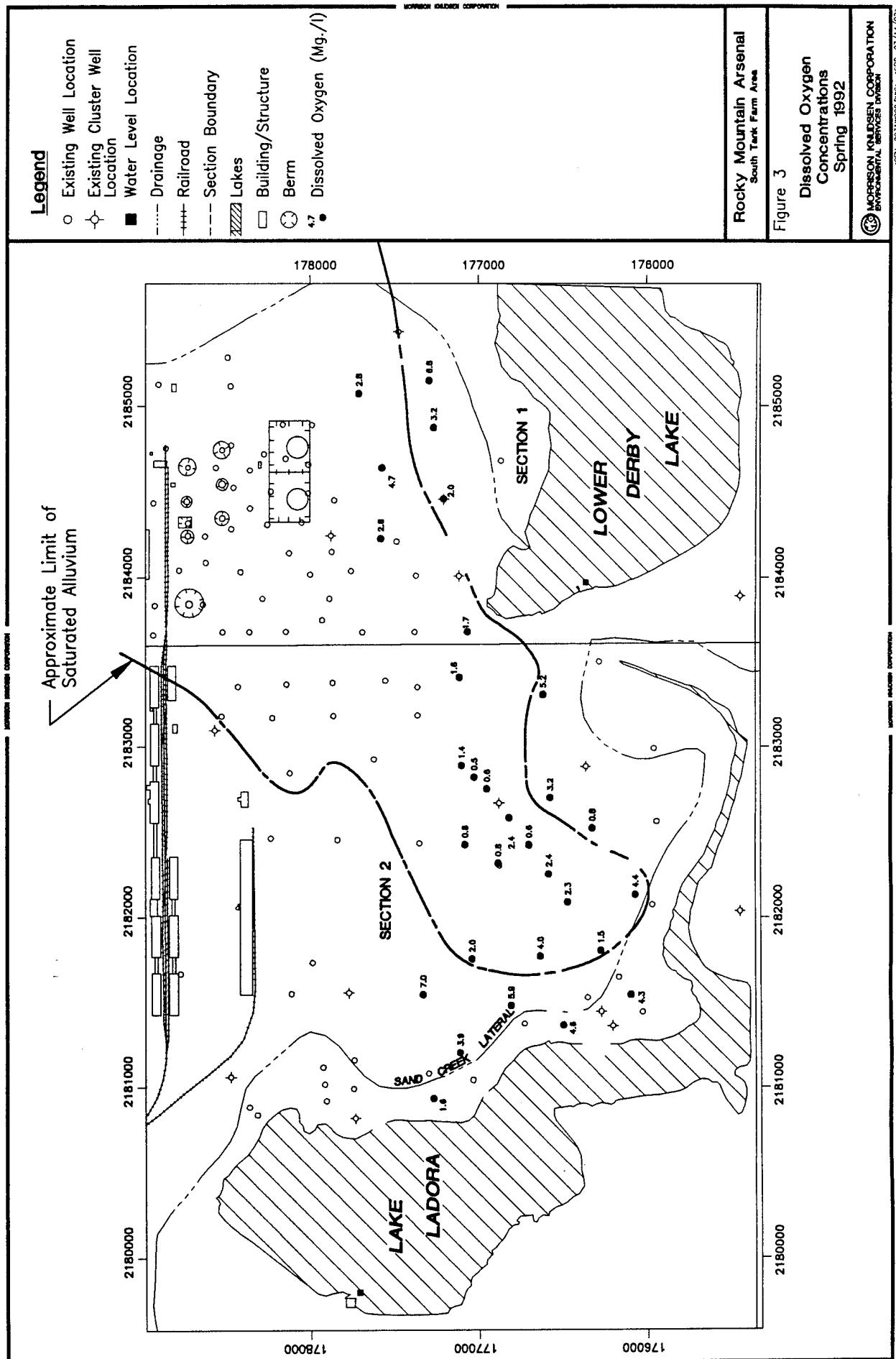
South Tank Farm Plume
Location Map

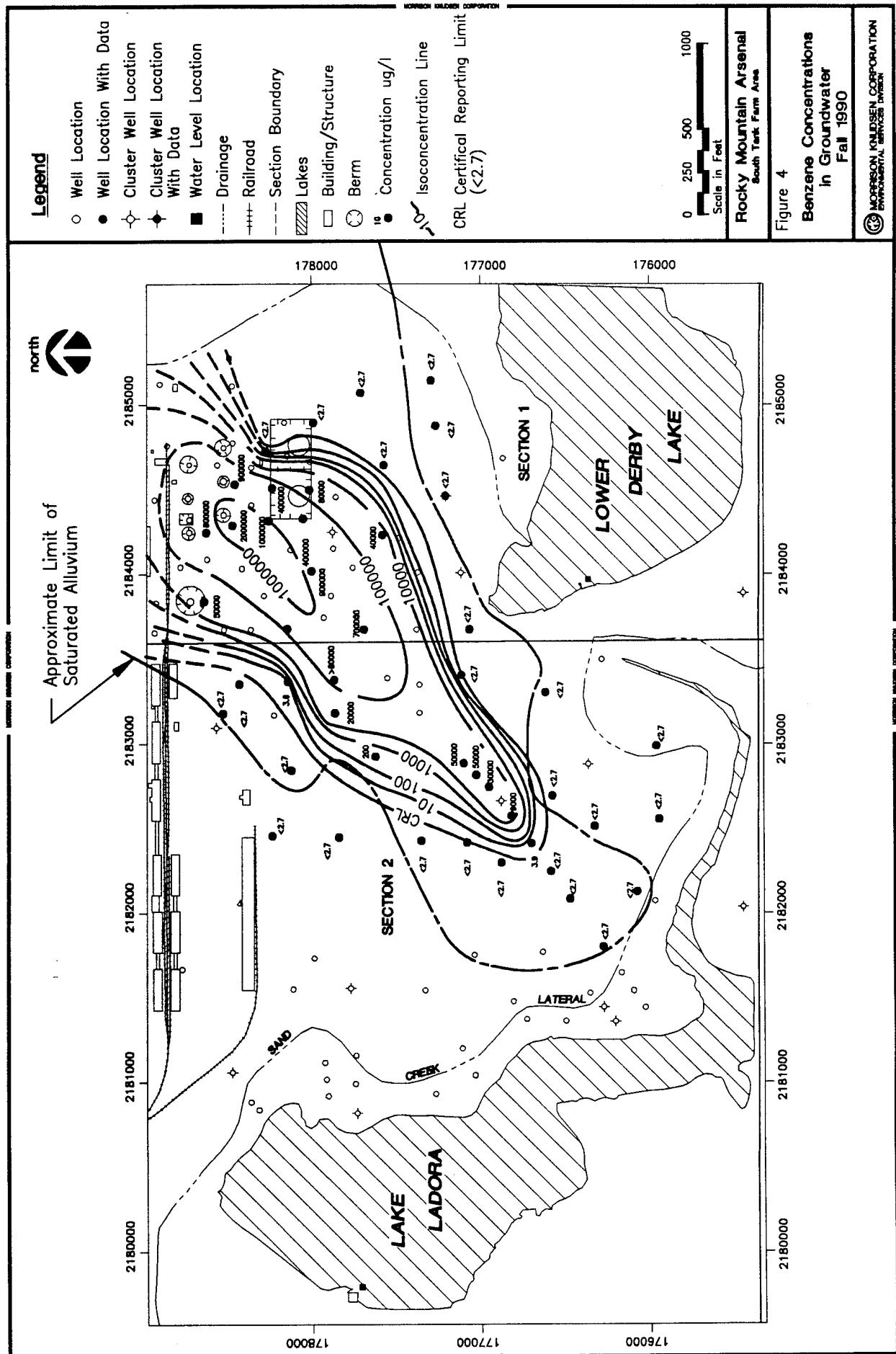
 MORRISON KNUDSEN CORPORATION
ENVIRONMENTAL SERVICES GROUP

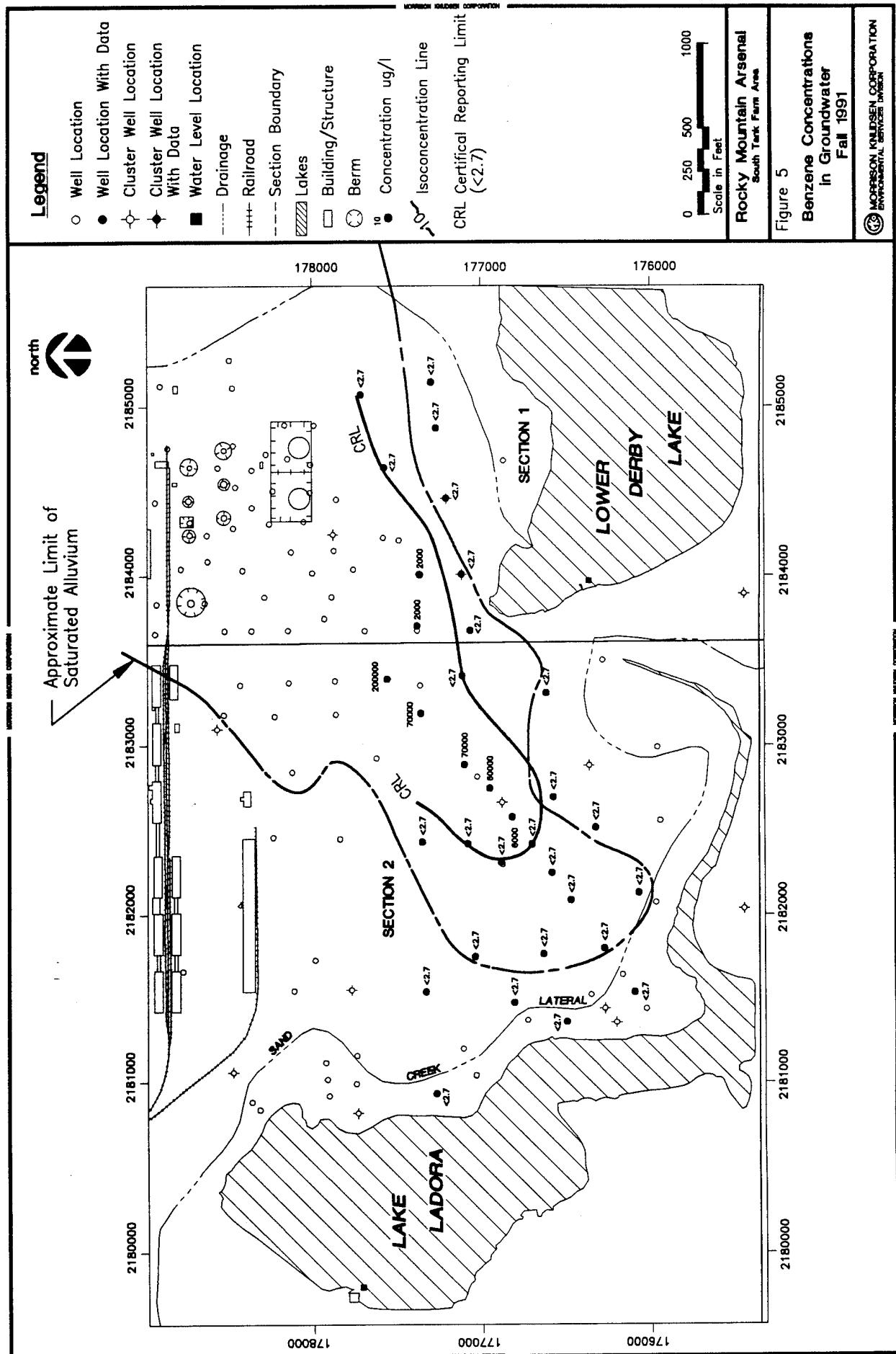
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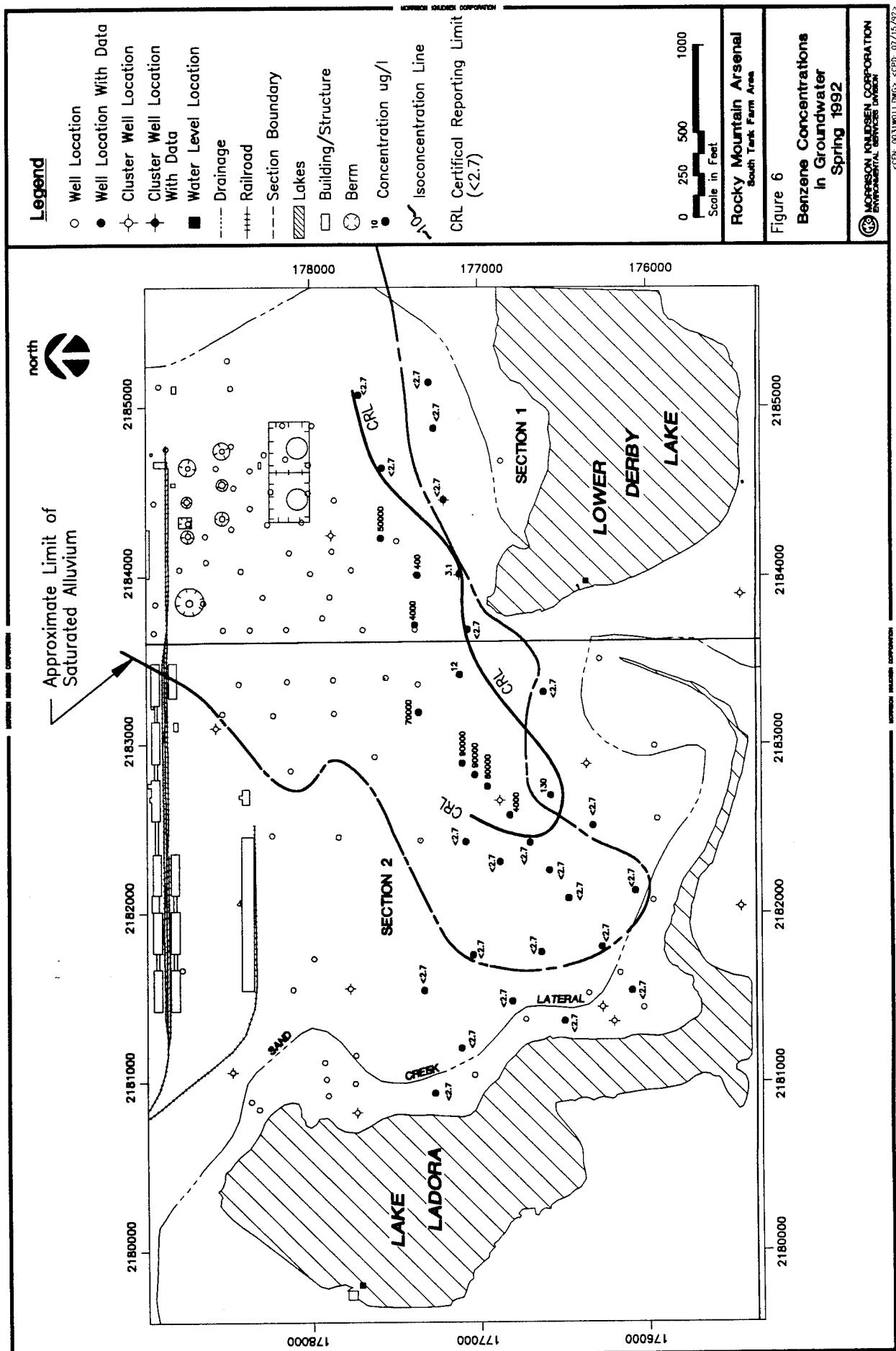
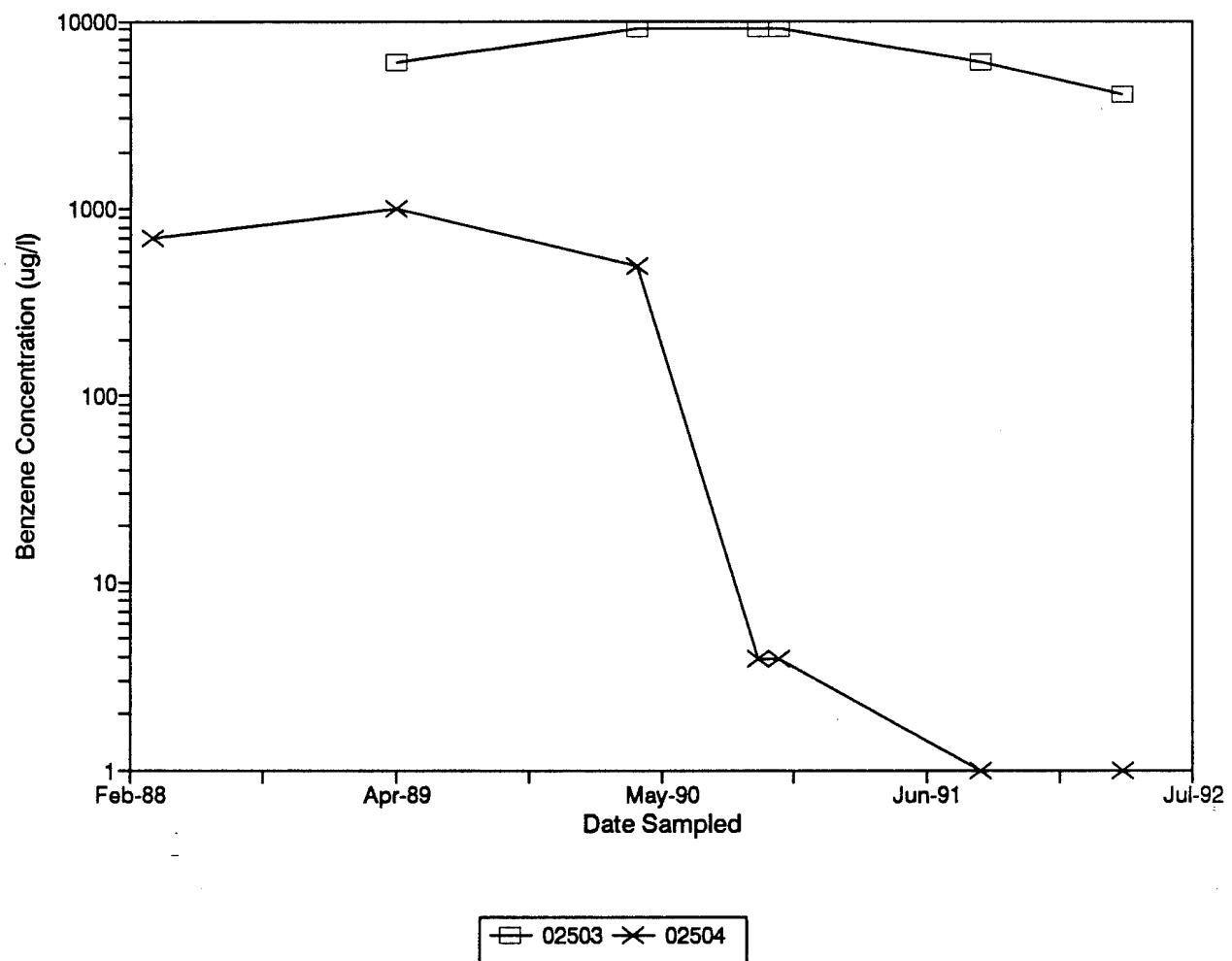


FIGURE 7
Benzene Concentrations at the Leading
Edge of the Plume



APPENDIX

Appendix: South Tank Farm Plume IRA Annual Monitoring Rept July 1992

Site ID:	01049	01578	01579	01580	01581	01586	01588	01600	01604	01605	02501
Sample Date:	03/31/92	03/31/92	03/31/92	03/31/92	03/31/92	03/31/92	04/06/92	04/07/92	04/07/92	04/07/92	04/06/92
Lot Number:	RNS003	RNS004	RNS005	RNS006	RNS007	RNS008	RNV002	RNV010	RNV011	RNX002	RNV003
Sample Type:	Well	Well	Well	Trip Blank	Well	Well	Trip Blank	Well	Well	Well	Well
Compound											
111TCE	LT2.4	LT2.4	LT2.4	LT2.4	LT2.4	LT2.4	LT2.4	LT2.4	LT2.4	LT2.4	LT2.4
112TCE	LT1.6	LT1.6	LT1.6	LT1.6	LT1.6	LT1.6	LT1.6	LT1.6	LT1.6	LT1.6	LT1.6
11DCLE	LT1.4	LT1.4	LT1.4	LT1.4	LT1.4	LT1.4	LT1.4	LT1.4	LT1.4	LT1.4	9.6
12DCE	LT3.2	LT3.2	LT3.2	LT3.2	LT3.2	LT3.2	LT3.2	LT3.2	LT3.2	LT3.2	LT3.2
12DCLE	LT0.72	LT0.72	LT0.72	LT0.72	LT0.72	LT0.72	LT0.72	LT0.72	LT0.72	LT0.72	LT0.72
13DMB	LT2.9	LT2.9	LT2.9	LT2.9	LT2.9	LT2.9	LT2.9	LT2.9	LT2.9	LT2.9	LT2.9
BCHPD	LT1.8	LT1.8	LT1.8	LT1.8	LT1.8	LT1.8	LT1.8	LT1.8	LT1.8	LT1.8	LT1.8
C6H6	LT2.7	LT2.7	LT2.7	LT2.7	LT2.7	LT2.7	LT2.7	LT2.7	LT2.7	LT2.7	90000.
CCL4	LT4.9	LT4.9	LT4.9	LT4.9	LT4.9	LT4.9	LT4.9	LT4.9	LT4.9	LT4.9	400.
CH2CL2	ND5.0	R	ND5.0	R	ND5.0	R	ND5.0	R	ND5.0	R	ND5.0
CHCL3	LT1.7	LT1.7	LT1.7	LT1.7	LT1.7	LT1.7	LT1.7	LT1.7	LT1.7	LT1.7	20.
CLC6H5	LT1.8	LT1.8	LT1.8	LT1.8	LT1.8	LT1.8	LT1.8	LT1.8	LT1.8	LT1.8	67.
DBCP	LT5.6	LT5.6	LT5.6	LT5.6	LT5.6	LT5.6	LT5.6	LT5.6	LT5.6	LT5.6	LT5.6
DCPD	LT3.7	20.	8.8	LT3.7	LT3.7	LT3.7	LT3.7	500.	LT3.7	LT3.7	29.
DMDs	LT3.7	LT3.7	LT3.7	LT3.7	LT3.7	LT3.7	LT3.7	LT3.7	LT3.7	LT3.7	LT3.7
ETC6H5	LT2.4	LT2.4	LT2.4	LT2.4	LT2.4	LT2.4	LT2.4	LT2.4	LT2.4	LT2.4	LT2.4
MEC6H5	LT3.5	LT3.5	LT3.5	LT3.5	LT3.5	LT3.5	8.3	LT3.5	LT3.5	LT3.5	LT3.5
MIBK	LT1.2	LT1.2	LT1.2	LT1.2	LT1.2	LT1.2	LT1.2	LT1.2	LT1.2	LT1.2	LT1.2
TCLEE	LT2.9	LT2.9	LT2.9	LT2.9	LT2.9	LT2.9	LT2.9	LT2.9	LT2.9	LT2.9	LT2.9
TRCLE	LT2.0	LT2.0	LT2.0	LT2.0	LT2.0	LT2.0	LT2.0	LT2.0	LT2.0	LT2.0	1.9
XYLEN	LT2.4	LT2.4	LT2.4	LT2.4	LT2.4	LT2.4	72.	LT2.4	LT2.4	LT2.4	LT2.4

Flagcodes: R = Analyte is not certified; S = Results based on internal standard; D = Sample duplicate

Appendix: South Tank Farm Plume IRA Annual Monitoring Rept July 1992

Site ID:	02502	02503	02503	02504	02505	02506	02507	02508	02509	02511	02513
Sample Date:	04/06/92	04/06/92	04/03/92	04/03/92	04/02/92	04/02/92	04/02/92	04/03/92	04/01/92	04/03/92	04/02/92
Lot Number:	RNV004	RNV005	RNV006	RNU002	RNU009	RNR009	RNR010	RNU003	RNS009	RNU004	RNR012
Sample Type:	Well	Well	Rinse Blank	Well	Trip Blank	Well	Trip Blank	Well	Well	Well	Well
Compound											
111TCE	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4
112TCE	LT 1.6	LT 1.6	LT 1.6	LT 1.6	LT 1.6	LT 1.6	LT 1.6	LT 1.6	LT 1.6	LT 1.6	LT 1.6
11DCLE	16.	61.	LT 1.4	70.	LT 1.4	68.	LT 1.4	59.	13.	LT 1.4	35.
12DCE	LT 3.2	16.	LT 3.2	23.	LT 3.2	18.	LT 3.2	15.	5.0	LT 3.2	9.7
12DCLE	LT 700.	LT 70.	LT 0.72	1.4	LT 0.72	0.98	LT 0.72	LT 0.72	LT 0.72	LT 0.72	LT 0.72
13DMB	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 2.9
BCHPD	LT 1.8	LT 1.8	LT 1.8	LT 1.8	LT 1.8	LT 1.8	LT 1.8	LT 1.8	LT 1.8	LT 1.8	LT 1.8
C6H6	60000.	4000.	15.	LT 2.7	LT 2.7	LT 2.7	LT 2.7	LT 2.7	LT 2.7	LT 2.7	LT 2.7
CCL4	LT 4.9	LT 4.9	LT 4.9	LT 4.9	LT 4.9	LT 4.9	LT 4.9	LT 4.9	LT 4.9	LT 4.9	LT 4.9
CH2Cl2	ND 5.0	R	ND 5.0	R	ND 5.0	R	ND 5.0	R	ND 5.0	R	ND 5.0
CHCl3	19.	LT 1.7	3.4	LT 1.7	34.	LT 1.7	120.	8.7	LT 1.7	LT 1.7	160.
ClO8H5	56.	45.	LT 1.8	13.	LT 1.8	LT 1.8	LT 1.8	LT 1.8	LT 1.8	LT 1.8	LT 1.8
DBCP	LT 5.6	LT 5.6	LT 5.6	LT 5.6	LT 5.6	LT 5.6	LT 5.6	LT 5.6	LT 5.6	LT 5.6	LT 5.6
DCPD	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7
DMDS	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7
ETC6H5	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4
MEC6H5	LT 3.5	LT 3.5	LT 3.5	LT 3.5	LT 3.5	LT 3.5	LT 3.5	LT 3.5	LT 3.5	LT 3.5	LT 3.5
MIBK	LT 1.2	LT 1.2	LT 1.2	LT 1.2	LT 1.2	LT 1.2	LT 1.2	LT 1.2	LT 1.2	LT 1.2	LT 1.2
TGEE	LT 2.9	LT 2.9	3.3	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 2.9
TRCLE	2.0	3.2	LT 2.0	4.9	LT 2.0	4.3	LT 2.0	3.8	LT 2.0	LT 2.0	2.8
XYLEN	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4

Flagcodes: R = Analyte is not certified; S = Results based on internal standard; D = Sample duplicate

Appendix: South Tank Farm Plume IRA Annual Monitoring Rept July 1992

Site ID:	02514	02515	02518	02522	02524	02525	02526	02576 F	02577	02577	02585
Sample Date:	04/02/92	04/01/92	04/07/92	04/07/92	04/01/92	04/01/92	04/06/92	04/06/92	04/03/92	04/03/92	04/01/92
Lot Number:	RNT003	RNT004	RNR002	RNX003	RNR003	RNR004	RNR005	RNV007	RNU005	RNU008	RNR006
Sample Type:	Well	Well	Well	Well	Trip Blank	Well	Well	Well	Well	Well	Well
Compound											
111TCE	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4
112TCE	LT 1.6	LT 1.6	LT 1.6	LT 1.6	LT 1.6	LT 1.6	LT 1.6	LT 1.6	LT 1.6	LT 1.6	LT 1.6
11DCLE	7.3	5.8	5.3	LT 1.4	1.8	32.	LT 1.4	LT 1.4	LT 1.4	47.	47.
12DCE	LT 3.2	LT 3.2	LT 3.2	LT 3.2	LT 3.2	12.	LT 3.2	LT 3.2	9.7	D	9.7
12DCLE	LT 0.72	LT 0.72	LT 0.72	LT 0.72	LT 0.72	LT 0.72	LT 0.72	LT 0.72	LT 0.72	D	LT 0.72
13DMB	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 2.9	D	LT 2.9				
BCHPD	LT 1.8	LT 1.8	LT 1.8	LT 1.8	LT 1.8	D	LT 1.8				
C6H6	LT 2.7	LT 2.7	70000.	LT 2.7	LT 2.7	LT 2.7	LT 2.7	90000.	19.	LT 2.7	D
CCL4	LT 4.9	LT 4.9	LT 4.9	LT 4.9	LT 4.9	D	LT 2.7				
CH2Cl2	ND 5.0	R	ND 5.0	R	ND 5.0	R	ND 5.0	R	ND 5.0	R	ND 5.0
CHCl3	3.0	40.	55.	LT 1.7	LT 1.7	200.	LT 1.7	9.8	LT 1.7	30.	D
ClO8H5	LT 1.8	LT 1.8	2.5	LT 1.8	LT 1.8	LT 1.8	LT 1.8	45.	LT 1.8	D	LT 1.8
DBCP	LT 5.6	LT 5.6	LT 5.6	LT 5.6	LT 5.6	D	LT 5.6				
DCPD	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7	D	LT 3.7				
DMDS	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7	D	LT 3.7				
ETC6H5	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	D	LT 2.4				
MEC6H5	LT 3.5	LT 3.5	LT 3.5	LT 3.5	LT 3.5	D	LT 3.5				
MIBK	LT 1.2	LT 1.2	LT 1.2	LT 1.2	LT 1.2	D	LT 1.2				
TCLEE	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 2.9	2.4	D				
TRCLE	LT 2.0	2.5	3.8	LT 2.0	2.9	4.6	LT 2.0	LT 2.0	3.1	D	3.0
XYLEN	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	D	LT 2.4				

Flagcodes: R = Analyte is not certified; S = Results based on internal standard; D = Sample duplicate

Appendix: South Tank Farm Plume IRA Annual Monitoring Rept July 1992

Site ID:	02596	02597	02597 T	02598
Sample Date:	04/03/92	04/01/92	04/01/92	04/03/92
Lot Number:	RNU006	RNR007	RNT002	RNU007
Sample Type:	Well	Well	Trip Blank	Well
Compound				
111TCE	LT 2.4	LT 2.4	LT 2.4	LT 2.4
112TCE	LT 1.6	LT 1.6	LT 1.6	LT 1.6
11DCLE	LT 1.4	30.	LT 1.4	62.
12DCE	LT 3.2	9.7	LT 3.2	15.
12DCLE	LT 0.72	LT 0.72	LT 0.72	LT 0.72
13DMB	LT 2.9	LT 2.9	LT 2.9	LT 2.9
BCHPD	LT 1.8	LT 1.8	LT 1.8	LT 1.8
C6H6	130.	LT 2.7	LT 2.7	LT 2.7
CCL4	LT 4.9	LT 4.9	LT 4.9	LT 4.9
CH2CL2	ND 5.0	R	ND 5.0	R
CHCL3	LT 1.7	200.	LT 1.7	110.
CLC6H5	LT 1.8	LT 1.8	LT 1.8	LT 1.8
DBCP	LT 5.6	LT 5.6	LT 5.6	LT 5.6
DCPD	LT 3.7	LT 3.7	LT 3.7	LT 3.7
DMDS	LT 3.7	LT 3.7	LT 3.7	LT 3.7
ETC6H5	LT 2.4	LT 2.4	LT 2.4	LT 2.4
MEC6H5	LT 3.5	LT 3.5	LT 3.5	LT 3.5
MIBK	LT 1.2	LT 1.2	LT 1.2	LT 1.2
TCLEE	LT 2.9	LT 2.9	LT 2.9	LT 2.9
TRCLE	LT 2.0	6.5	LT 2.0	4.6
XYLEN	LT 2.4	LT 2.4	LT 2.4	LT 2.4

Flagcodes: R = Analyte is not certified; S = Results based on internal standard; D = Sample duplicate

Appendix: South Tank Farm Plume IRA Annual Monitoring Report July 1992

Site ID:	01049	01049	01578	01579	01580	01580	01581	01586	01600	01604	01605	01605
Sample Date:	09/16/91	09/16/91	09/23/91	09/23/91	09/16/91	09/16/91	09/16/91	09/16/91	09/16/91	09/24/91	09/23/91	09/23/91
Lot Number:	RNB003	RNB004	RNI003	RNI004	RNB005	RNB006	RNB007	RNB009	RNB010	RNH003	RNI005	RNG004
Sample Type:	Well	Well	Well	Well	Well	Rinse Blank	Well	Well	Trip Blank	Well	Well	Trip Blank
Compound												
111TCE	LT 2.4	D	LT 2.4	LT 2.4	25.	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 10.	LT 2.4.
112TCE	LT 1.6	D	LT 1.6	LT 1.6	LT 1.6	LT 1.6	LT 1.6	LT 1.6	LT 1.6	LT 1.6	LT 8.	LT 1.6
11DCLE	LT 1.4	D	LT 1.4	LT 1.4	LT 1.4	LT 1.4	LT 1.4	LT 1.4	LT 1.4	LT 1.4	LT 7.	LT 1.4
12DCE	LT 3.2	D	LT 3.2	LT 3.2	LT 3.2	LT 3.2	LT 3.2	LT 3.2	LT 3.2	LT 3.2	LT 20.	LT 3.2
12DCLE	1.1	0.96	D	LT 0.72	LT 0.72	LT 0.72	LT 0.72	LT 0.72	LT 0.72	LT 0.72	LT 4.	LT 0.72
13DMB	LT 2.9	D	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 10.	LT 2.9
BCHPD	LT 1.8	LT 1.8	D	LT 1.8	LT 1.8	LT 1.8	LT 1.8	LT 1.8	LT 1.8	LT 1.8	LT 9.	20.
C6H6	LT 2.7	LT 2.7	D	LT 2.7	LT 2.7	500.	LT 2.7	LT 2.7	LT 2.7	LT 2.7	2000.	LT 2.7
CCL4	LT 4.9	LT 4.9	D	LT 4.9	LT 4.9	LT 4.9	LT 4.9	LT 4.9	LT 4.9	LT 4.9	LT 20.	LT 4.9
CH2Cl2	ND 5.0	R	ND 5.0	R	ND 5.0	R	ND 5.0	R	ND 5.0	R	ND 30.	R
CHCl3	LT 1.7	D	LT 1.7	LT 1.7	20.	LT 1.7	LT 1.7	LT 1.7	LT 1.7	LT 1.7	LT 9.	LT 1.7
ClO6H5	LT 1.8	D	LT 1.8	LT 1.8	LT 1.8	LT 1.8	LT 1.8	LT 1.8	LT 1.8	LT 1.8	LT 9.	LT 1.8
DBCP	LT 5.6	D	LT 5.6	LT 5.6	LT 5.6	LT 5.6	LT 5.6	LT 5.6	LT 5.6	LT 5.6	LT 30.	LT 5.6
DCPD	LT 3.7	LT 3.7	D	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 20.	50.
DMDS	LT 3.7	LT 3.7	D	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 20.	LT 3.7
ETC6H5	LT 2.4	D	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 10.	LT 2.4
MECHS5	LT 3.5	LT 3.5	D	LT 3.5	LT 3.5	LT 3.5	LT 3.5	LT 3.5	LT 3.5	LT 3.5	LT 20.	LT 3.5
MIBK	LT 1.2	LT 1.2	D	LT 1.2	LT 1.2	LT 1.2	LT 1.2	LT 1.2	LT 1.2	LT 1.2	LT 6.	LT 1.2
TCLEE	LT 2.9	LT 2.9	D	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 10.	LT 2.9
TRCLE	LT 2.0	LT 2.0	D	LT 2.0	LT 2.0	LT 2.0	LT 2.0	LT 2.0	LT 2.0	LT 2.0	LT 10.	LT 2.0
XYLEN	LT 2.4	LT 2.4	D	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 10.	LT 2.4

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Appendix: South Tank Farm Plume IRA Annual Monitoring Report July 1992

Site ID:	02020	02502	02503	02504	02505	02506	02507	02508
Sample Date:	09/17/91	09/23/91	09/23/91	09/23/91	09/18/91	09/18/91	09/18/91	09/19/91
Lot Number:	RNB011	RNG006	RNG005	RNH002	RND004	RNC009	RND006	RNG002
Sample Type:	Well	Well	Rinse Blank	Well	Well	Trip Blank	Well	Well
Compound								
111TCE	LT 2.4	LT 200.	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4
112TCE	LT 1.6	LT 200.	LT 1.6	LT 1.6	LT 1.6	LT 1.6	LT 1.6	LT 1.6
11DCLE	6.8	LT 100.	LT 1.4	50.	57.	71.	19.	18.
12DCE	LT 3.2	LT 300.	LT 3.2	LT 30.	15.	19.	13.	14.
12DCL	0.95	LT 70.	0.91	LT 7.	2.0	1.5	0.91	0.87
13DMB	LT 2.9	LT 300.	LT 2.9	LT 30.	LT 2.9	LT 2.9	LT 2.9	LT 2.9
BCHPD	LT 1.8	LT 200.	LT 1.8	LT 20.	LT 1.8	LT 1.8	LT 1.8	LT 1.8
C6H6	LT 2.7	60000.	3.5	6000.	LT 2.7	LT 2.7	LT 2.7	LT 2.7
CCL4	LT 4.9	LT 500.	LT 4.9	LT 50.	LT 4.9	LT 4.9	LT 4.9	LT 4.9
CH2CL2	ND 5.0	R ND 5.0	R ND 5.0	R ND 5.0	R ND 5.0	R ND 5.0	R ND 5.0	R ND 5.0
CHCl3	LT 1.7	LT 200.	3.4	LT 20.	LT 1.7	47.	54.	50.
CLC6H5	LT 1.8	LT 200.	LT 1.8	40.	13.	LT 1.8	LT 1.8	LT 1.8
DBCP	LT 5.6	LT 600.	LT 5.6	LT 60.	LT 5.6	LT 5.6	LT 5.6	LT 5.6
DCPD	LT 3.7	LT 400.	LT 3.7	LT 40.	LT 3.7	LT 3.7	LT 3.7	LT 3.7
DMDS	LT 3.7	LT 400.	LT 3.7	LT 40.	LT 3.7	LT 3.7	LT 3.7	LT 3.7
ETC6H5	LT 2.4	LT 200.	LT 2.4	LT 20.	LT 2.4	LT 2.4	LT 2.4	LT 2.4
MEC6H5	LT 3.5	LT 400.	LT 3.5	LT 40.	LT 3.5	LT 3.5	LT 3.5	LT 3.5
MIBK	LT 1.2	LT 100.	LT 1.2	LT 10.	LT 1.2	LT 1.2	LT 1.2	LT 1.2
TCLEE	LT 2.9	LT 300.	LT 2.9	LT 30.	LT 2.9	LT 2.9	LT 2.9	LT 2.9
TRCLE	LT 2.0	LT 200.	LT 2.0	LT 20.	LT 2.0	LT 2.0	LT 2.0	LT 2.0
XYLEN	LT 2.4	LT 200.	LT 2.4	LT 20.	LT 2.4	LT 2.4	LT 2.4	LT 2.4

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Appendix: South Tank Farm Plume IRA Annual Monitoring Report July 1992

Site ID:	02508	02509	02511	02512	02513	02514	02515	02518	02521	02521
Sample Date:	09/19/91	09/17/91	09/20/91	09/17/91	09/19/91	09/19/91	09/19/91	09/18/91	09/24/91	09/24/91
Lot Number:	RND010	RNB012	RNF006	RNB013	RNF002	RNF003	RNF005	RNE002	RNF010	RNF004
Sample Type:	Trip Blank	Well	Well	Well	Well	Well	Well	Rinse Blank	Well	Trip Blank
Compound										
111TCE	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	D	LT 2.4	LT 2.4	LT 200.	LT 2.4
112TCE	LT 1.6	LT 1.6	LT 1.6	LT 1.6	LT 1.6	D	LT 1.6	LT 1.6	LT 200.	LT 1.6
11DCLE	LT 1.4	LT 1.4	LT 1.4	LT 1.4	35.	32.	D	5.1	LT 100.	LT 1.4
12DCE	LT 3.2	LT 3.2	LT 3.2	LT 3.2	9.7	4.8	D	LT 3.2	LT 300.	LT 3.2
12DCLE	LT 0.72	0.94	0.82	0.79	0.95	0.88	D	0.76	LT 70.	LT 0.72
13DMB	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 2.9	D	LT 2.9	LT 2.9	LT 300.	LT 2.9
BCHPD	LT 1.8	LT 1.8	LT 1.8	LT 1.8	LT 1.8	D	LT 1.8	LT 1.8	LT 200.	LT 1.8
C6H6	LT 2.7	LT 2.7	LT 2.7	LT 2.7	LT 2.7	D	LT 2.7	LT 2.7	200000.	LT 2.7
CCL4	LT 4.9	LT 4.9	LT 4.9	LT 4.9	LT 4.9	D	LT 4.9	LT 4.9	LT 500.	LT 4.9
CH2Cl2	ND 5.0	R ND 5.0	R ND 5.0	R ND 5.0	R ND 5.0	R	ND 5.0	R	ND 500.	ND 5.0
CHCl3	LT 1.7	LT 1.7	LT 1.7	LT 1.7	200.	D	97.	32.	LT 1.7	LT 1.7
CLC6H5	LT 1.8	LT 1.8	LT 1.8	LT 1.8	LT 1.8	D	LT 1.8	LT 1.8	LT 200.	LT 1.8
DBCP	LT 5.6	LT 5.6	LT 5.6	LT 5.6	LT 5.6	D	LT 5.6	LT 5.6	LT 600.	LT 5.6
DCPD	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7	D	LT 3.7	LT 3.7	LT 400.	LT 3.7
DMDS	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7	D	LT 3.7	LT 3.7	LT 400.	LT 3.7
ETC6H5	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	D	LT 2.4	LT 2.4	LT 200.	LT 2.4
MEC6H5	LT 3.5	LT 3.5	LT 3.5	LT 3.5	LT 3.5	D	LT 3.5	LT 3.5	LT 400.	LT 3.5
MIBK	LT 1.2	LT 1.2	LT 1.2	LT 1.2	LT 1.2	D	LT 1.2	LT 1.2	LT 100.	LT 1.2
TCLEE	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 2.9	D	LT 2.9	LT 2.9	LT 300.	LT 2.9
TCLE	LT 2.0	LT 2.0	LT 2.0	LT 2.0	LT 2.0	D	LT 2.0	LT 2.0	LT 200.	LT 2.0
XYLEN	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4	D	LT 2.4	LT 2.4	LT 200.	LT 2.4

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Appendix: South Tank Farm Plume IRA Annual Monitoring Report July 1992

Site ID:	02522	02522	02524	02524	02525	02525	02526	02526	02577	02577	02578
Sample Date:	09/24/91	09/24/91	09/17/91	09/17/91	09/17/91	09/17/91	09/24/91	09/24/91	09/18/91	09/18/91	09/20/91
Lot Number:	RNI007	RNG007	RNC004	RNC003	RNC005	RNC006	RNI008	RNI007	RNE003	RND003	RNE004
Sample Type:	Well	Well	Well	Well	Well	Well	Well	Well	Well	Well	Trip Blank
Compound											
111TCE	LT 200.	LT 200.	D	LT 2.4	LT 2.4	LT 2.4	D	LT 2.4	LT 2.4	D	LT 2.4
112TCE	LT 200.	LT 200.	D	LT 1.6	LT 1.6	LT 1.6	D	LT 1.6	LT 1.6	D	LT 1.6
11DCLC	LT 100.	D	1.9	2.0	D	LT 1.4	28.	D	LT 1.4	57.	51.
12DCE	LT 300.	LT 300.	D	LT 3.2	LT 3.2	9.7	11.	D	LT 3.2	12.	12.
12DCLC	LT 70.	D	0.78	LT 0.72	D	LT 0.72	0.85	LT 0.72	D	0.91	1.4
13DMB	LT 300.	LT 300.	D	LT 2.9	LT 2.9	LT 2.9	D	LT 2.9	LT 300.	LT 2.9	LT 2.9
BCHPD	LT 200.	LT 200.	D	LT 1.8	LT 1.8	LT 1.8	D	LT 1.8	LT 200.	LT 1.8	LT 1.8
C6H6	70000.	70000.	D	LT 2.7	LT 2.7	LT 2.7	D	LT 2.7	70000.	LT 2.7	LT 2.7
CCL4	LT 500.	LT 500.	D	LT 4.9	LT 4.9	LT 4.9	D	LT 4.9	LT 500.	LT 4.9	LT 4.9
CH2CL2	ND 500.	ND 500.	R	ND 5.0	R	ND 5.0	R	ND 5.0	R	ND 5.0	R
CHCL3	LT 200.	LT 200.	D	LT 1.7	LT 1.7	LT 1.7	D	LT 1.7	LT 200.	41.	35.
CLC6H5	LT 200.	LT 200.	D	LT 1.8	LT 1.8	LT 1.8	D	LT 1.8	LT 200.	5.3	5.6
DBCP	LT 600.	LT 600.	D	LT 5.6	LT 5.6	LT 5.6	D	LT 5.6	LT 600.	LT 5.6	LT 5.6
DCPD	LT 400.	LT 400.	D	LT 3.7	LT 3.7	LT 3.7	D	LT 3.7	LT 400.	LT 3.7	LT 3.7
DMDS	LT 400.	LT 400.	D	LT 3.7	LT 3.7	LT 3.7	D	LT 3.7	LT 400.	LT 3.7	LT 3.7
ETC6H5	LT 200.	LT 200.	D	LT 2.4	LT 2.4	LT 2.4	D	LT 2.4	LT 200.	LT 2.4	LT 2.4
MEC6H5	LT 400.	LT 400.	D	LT 3.5	LT 3.5	LT 3.5	D	LT 3.5	LT 400.	LT 3.5	LT 3.5
MIBK	LT 100.	LT 100.	D	LT 1.2	LT 1.2	LT 1.2	D	LT 1.2	LT 100.	LT 1.2	LT 1.2
TCLEE	LT 300.	LT 300.	D	LT 2.9	LT 2.9	LT 2.9	D	LT 2.9	LT 300.	LT 2.9	LT 2.9
TRCLE	LT 200.	LT 200.	D	LT 2.0	LT 2.0	4.0	3.8	D	LT 2.0	LT 200.	3.4
XYLEN	LT 200.	LT 200.	D	LT 2.4	LT 2.4	LT 2.4	D	LT 2.4	LT 200.	LT 2.4	LT 2.4

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Appendix: South Tank Farm Plume IRA Annual Monitoring Report July 1992

Site ID:	02585	02596	02597	02598	02598
Sample Date:	09/17/91	09/20/91	09/18/91	09/20/91	09/20/91
Lot Number:	RNC008	RNF008	RND008	RNF009	RNI002
Sample Type:	Well	Well	Well	Well	Well
Compound					
111TCE	19.	LT 2.4	LT 2.4	LT 2.4	LT 2.4 D
112TCE	LT 1.6	LT 1.6	LT 1.6	LT 1.6	LT 1.6 D
111DCE	LT 1.4	LT 1.4	25.	62.	58. D
122DCE	LT 3.2	LT 3.2	7.4	13.	13. D
122DCE	2.0	0.81	0.93	LT 0.72	LT 0.72 D
13DMB	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 2.9 D
BCHPD	LT 1.8	LT 1.8	LT 1.8	LT 1.8	LT 1.8 D
C6H6	LT 2.7	LT 2.7	LT 2.7	LT 2.7	LT 2.7 D
CCl4	LT 4.9	LT 4.9	LT 4.9	LT 4.9	LT 4.9 D
CH2CL2	ND 5.0	R ND 5.0	R ND 5.0	R ND 5.0	R ND 5.0 R
CHCl3	LT 1.7	LT 1.7	200.	99.	91. D
CLC6H5	LT 1.8	LT 1.8	LT 1.8	LT 1.8	LT 1.8 D
DBCP	LT 5.6	LT 5.6	LT 5.6	LT 5.6	LT 5.6 D
DOPD	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7 D
DMDs	LT 3.7	LT 3.7	LT 3.7	LT 3.7	LT 3.7 D
ETC6H5	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4 D
MEC6H5	LT 3.5	LT 3.5	LT 3.5	LT 3.5	LT 3.5 D
MIBK	LT 1.2	LT 1.2	LT 1.2	LT 1.2	LT 1.2 D
TCLEE	LT 2.9	LT 2.9	LT 2.9	LT 2.9	LT 2.9 D
TRCLE	LT 2.0	LT 2.0	5.7	LT 2.0	LT 2.0 D
XYLEN	LT 2.4	LT 2.4	LT 2.4	LT 2.4	LT 2.4 D

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